BLUE HILL HARBOR

MAINE

SURVEY REPORT

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION, BOSTON, MASS.

MAY 11, 1951

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NOT FOR PUBLIC RELEASE

SURVEY REPORT

ON

BLUE HILL HARBOR, MAINE

SYLLABUS

The Division Engineer finds that prospective benefits are insufficient to warrant the improvement of Blue Hill Harbor, Maine. He therefore recommends that no project for the improvement of Blue Hill Harbor be adopted at this time.

NOT FOR PUBLIC RELEASE

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION
P. O. BOX 2316
BOSTON 7, MASS.

May 11, 1951

SUBJECT: Survey Report on Blue Hill Harbor, Maine

TO: The Chief of Engineers, Department of the Army, Washington, 25, D. C.

AUTHORITY

1. This report is submitted in compliance with Section 6 of the River and Harbor Act, approved March 2, 1945 (Public Law No. 14 - 79th Congress) which reads in part as follows:

> "Sec. 6. The Secretary of War is hereby authorized and directed to cause preliminary examinations and surveys to be made at the following-named localities, ... Blue Hill Harbor, Maine."

2. A preliminary examination, submitted by the District Engineer on March 29, 1946, was reviewed by the Board of Engineers for Rivers and Harbors, and a survey was recommended. A report of survey scope was authorized October 18, 1946 by the Chief of Engineers.

DESCRIPTION

3. Blue Hill Harbor is located on the northwestern end of Blue Hill Bay, northwest and westerly of Long and Mount Desert Islands. Small boat harbors within easy cruising distance are Morgan Bay about 5 miles to the northeast, Union River about 11 miles to the northeast, Northeast Harbor about 24 miles to the southeast, and Bar Harbor about 34 miles to the east.

4. Blue Hill Harbor is extensive in area, being made up of 3 component parts which are known locally as the outer, middle, and inner harbors. The outer harbor, situated southeast of Parker and Sculpin Points, has an area of approximately 350 acres and depths varying from 24 to 48 feet.

It is exposed to easterly and southerly winds. The outer harbor connects with the middle harbor, which lies to the northwest, by a relatively deep natural channel between Parker and Sculpin Points. This channel has a width of about 150 feet and a controlling depth of 20 feet. The middle harbor has an area of about 46 acres and has depths ranging from 16 to 28 feet. The middle harbor is well protected from all storms, except those originating in the southeast quadrant. It connects with the inner harbor which lies to the northwest, by means of a natural channel passing between Parker and Peters Points. The channel has a minimum width of 150 feet and a controlling depth of about 19 feet. The inner harbor is adjacent to the center of the town of Blue Hill and is well protected from all storms. It has an area in its eastern half of about 23 acres in which depths range from about 7 to 25 feet. In its western half there is an area of about 27 acres in which shallow depths prevail, ranging from 6 feet at a point about 2500 feet southeast of the town wharf to +3.5 feet at the wharf which is at the head of the harbor.

5. The mean range of tide is 10.3 feet and the spring range 11.7 feet. The locality is shown on U. S. Coast and Geodetic Survey Charts numbered 1202 and 307, and on the map accompanying this report.

TRIBUTARY AREA

6. Blue Hill is the center of one of Maine's older summer resort areas. In 1940 it had a permanent population of 1,343, with a real estate valuation of $1,263,068. Its population was given as 1323 in the preliminary announcements of the 1950 census. The town's economy is dependent on the summer tourist business. The summer residents, most of whom come from other states, have built up the shore line of Blue Hill so that about 80 percent of its 15 miles of shoreline is now occupied by estates and summer homes. At the present time, there are no important industrial or manufacturing concerns in the town. In the past, granite quarrying and lumbering operations were carried on in this area.

7. The town has no railroad connections, but is served by a number of common carrier motor truck companies over a network of paved highways.

BRIDGES

8. There are no bridges in the area considered in this report.

PRIOR REPORTS

9. The Corps of Engineers has made no prior reports on this waterway other than the unpublished preliminary examination, dated March 29, 1946, which forms the basis of this study.

EXISTING CORPS OF ENGINEERS PROJECT

10. There is no existing Corps of Engineers project for the improvement of this harbor.

TERMINAL AND TRANSFER FACILITIES

11. There is a town wharf located at the head of the inner harbor which is open to the public free of charge. The wharf is of the timber-crib, solid fill type and is in need of repairs. The upper end of the inner harbor is dry at mean low tide, with the mean low water line being about 500 feet from the Town Wharf. There is ample room for construction of wharves along the shore of the inner harbor.

12. On Peters Point, about 3400 feet southeasterly of the town wharf, there are the remains of an old steamship wharf. There is a depth in its berth of about 13 feet at mean low water. However, this structure is in disrepair and only limited use can be made of it.

13. During the boating season, a float for recreational craft is installed by the Kollegewidgwok Yacht Club which is located on the east shore of middle harbor opposite Peters Point. The float is 125 feet long, 16 feet wide and connected to shore by a movable ramp. Oil, water, and fueling facilities are provided at this float. The Mackin Wharf is just north of this yacht club and is a stone fill structure formerly used for the operation of the White Granite Company.

IMPROVEMENTS DESIRED

14. A public hearing was held at Blue Hill, Maine, on July 18, 1945, in order to determine the improvements desired by local interests. The hearing was attended by representatives of the town government, various townspeople and many summer residents.

15. The plan of improvement proposed at the hearing, which was in accord with the desires of all present, consists of the following:

> A channel 100 feet wide and 6 feet deep at mean low water extending from the 6-foot depth curve in the vicinity of the old steamboat wharf at Peters Point to the town wharf at the head of the harbor. A turning basin at the inner end of the channel, of the same depth as the channel and about 350 feet square.

16. Proponents of the improvement advanced various reasons to justify the improvements. They cited the rapid increase in yachting activities in Blue Hill Harbor in the years immediately preceding World War II and the expectation that this increase would continue in the post-war period. It was claimed that this rate would be severely hampered by the lack of suitable channel depth in the inner harbor. It was stated that lack of channel depth at present compels yachts to anchor in the harbor and row ashore to obtain supplies and fuel. For this reason, many boats that would ordinarily visit the area now by-pass it for other harbors that have suitable wharfing facilities. It was stated also that the town of Blue Hill offers many advantages, such as a shopping center, a machine shop equipped to handle any repairs on boats coming into the harbor, and excellent hospital facilities which serve surrounding communities. These facilities would enhance the desirability of the harbor as a port of call for recreational boats.

17. At the time of the hearing, some fishermen, when conditions permitted, worked out of the inner harbor. These fishermen procured fuel and supplies in the center of Blue Hill and landed their catch at the town wharf. Their inability to land at the town wharf, except during high water periods, handicapped them seriously. During periods of two-thirds tide or less they were forced to anchor a considerable distance offshore and carry fuel and supplies to the boats, and also carry their catch ashore. They claimed too that they were unable to dock at the wharf while repairs to boats engines and gear were made by the local machine shop. These conditions, it was stated, precluded the growth of the fishing industry in Blue Hill.

18. A subsequent field investigation made in 1950 revealed that there are no fishermen now basing in the inner harbor and that the only fishermen operating out of the town of Blue Hill are based at South Blue Hill, 5 miles southerly of Blue Hill Harbor.

COMMERCE

19. There are no available records of any commerce in Blue Hill Harbor. The hearing indicated that in the past considerable quantities of granite were shipped from the middle harbor. This shipping was discontinued approximately 30 years ago and commerce in the harbor has been negligible since that time.

20. It was stated at the hearing that some fish is landed at the town wharf. Inquiries made in the town of Blue Hill revealed that practically all of this fish is caught on hand lines through the ice in the harbor during the winter months. A total of 9 tons of fish was caught in this manner in the winter of 1949-1950. Commercial fishing boats no longer land their catch in the inner harbor.

VESSEL TRAFFIC

21. There is no record of the movement of fishing or recreational craft in the inner harbor.

22. There are 64 recreational boats based in the middle harbor, ranging in length from 40 feet for power cruisers to 17 feet for outboard motor boats. These boats have drafts varying from 5 feet to 1 foot. Local interests have advised that in addition approximately 270 transient recreational boats visit the middle harbor each year.

DIFFICULTIES ATTENDING NAVIGATION

23. The principal difficulty encountered in navigating the waterway is that which is attendant upon insufficient channel depths in the inner harbor. Under present conditions, navigation to the town wharf for the average vessels frequenting the area is possible only during the 6 hour high water period comprising 3 hours before and 3 hours after high water. At mean low water a vessel drawing 2 feet cannot approach closer than about 2000 feet from the wharf.

WATER POWER AND OTHER SPECIAL SUBJECTS

24. The waterway is tidal. Matters of water power or flood control are not pertinent to this report. None of the work considered would have an adverse effect on wildlife or shellfish.

PLAN OF IMPROVEMENT

25. The plan of improvement considered in this report is similar to that desired by local interests. The plan is based on information obtained by hydrographic and topographic surveys made in 1948. The considered plan would provide the following:

a. A channel 100 feet wide and 6 feet deep at mean low water extending from the existing 6-foot depth in the vicinity of the old steamboat wharf at the head of the inner harbor to within 200 feet of the Town wharf.

b. Widening adjacent to the Town wharf to form a turning basin 6 feet deep at mean low water, 300 feet wide by approximately 300 feet long.

26. This plan differs from the desired plan only in the dimensions of the turning basin which have been decreased to eliminate ledge rock excavation. Under the considered plan, a 200-foot extension to the Town

wharf would be required in order to provide a berthing area 6 feet deep. It is assumed that this work by the Town would be self-liquidating through rental of a concession to sell fuel and supplies.

AIDS TO NAVIGATION

27. The United States Coast Guard has been consulted on the matter of aids to navigation and has advised that the installation of a single station polychrome range light on shore and two buoys at the entrance of the channel would be required. These aids can be established at a cost of $3000, with annual maintenance costs of $220.

SHORE LINE CHANGES

28. The shore line of Blue Hill is the typical crenulated shore line of northern Maine, consisting of ledge outcroppings interspersed with short beach areas. It is considered that dredging within the inner harbor would have no effect upon such a shore.

ESTIMATE OF FIRST COST

29. Quantities estimated for dredging are for materials in place with a 1-foot overdepth allowance. The unit price is based on the material being removed by dipper dredge and disposed of in offshore disposal areas. Unit prices reflect costs prevailing in March 1951 for the type of work involved and include allowances for engineering and overhead. The cost of aids to navigation is based upon information furnished by the United States Coast Guard. The estimated first cost of improvements is as follows:

A. Construction

(1) Dredging Channel

6 feet deep at mean low water, 100 feet wide.

Approximately 60,000 cubic yards of sand, gravel, clay and mud at $1.75 — $105,000

(2) Dredging Turning Basin

6 feet deep at mean low water about 2 acres

Approximately 44,000 cubic yards of sand, gravel, and clay at $1.75 — 77,000

TOTAL COST OF DREDGING..... $182,000

B. Aids to Navigation

Installing single station light on shore and 2 buoys.	$ 3,000
C. TOTAL PROJECT COST	$185,000

ESTIMATE OF ANNUAL CHARGES

30. The estimated annual charges have been computed on an assumed life of 50 years, and on the assumption that local interests would contribute in cash $100,000 toward the cost of construction as described in paragraph 43. Interest rates of 3 percent for the Federal investment, and 3.5 percent for the non-Federal investment have been used.

INVESTMENT

Federal Investment

Construction cost, Corps of Engineers	$82,000	
Aids to Navigation, U. S. Coast Guard	3,000	
TOTAL FEDERAL INVESTMENT		$ 85,000

Non-Federal Investment

Construction cost, local interests	$100,000	
TOTAL NON-FEDERAL INVESTMENT		$100,000
TOTAL INVESTMENT		$185,000

ESTIMATED ANNUAL CARRYING CHARGES

Federal Annual Carrying Charges

Corps of Engineers

Interest on Investment	$ 2,500	
Amortization of Investment	700	
Maintenance	1,000	
TOTAL		$ 4,200

Coast Guard

Interest on Investment	$ 90	
Amortization of Investment	30	
Maintenance	220	
TOTAL		$ 340
TOTAL FEDERAL ANNUAL CARRYING CHARGES		$ 4,540

Non-Federal Carrying Charges

Interest on Investment	$3,500
Amortization of Investment	700
TOTAL NON-FEDERAL ANNUAL CARRYING CHARGES.....	$ 4,200
TOTAL ANNUAL CARRYING CHARGES.....	$ 8,740

ESTIMATE OF BENEFITS

31. The benefits to accrue to general small boat navigation through the improvement of the inner harbor at Blue Hill would result from the ability to reach a landing place at all tidal stages. At present, boats desiring to land at the Town wharf can do so only during the 6-hour high water period. These boats must be removed prior to the succeeding low water period or run aground at low tide and risk extensive damage.

32. The local recreational fleet is composed of the following craft with values as indicated:

Type of Craft	Number	Length (Feet)	Draft (Feet)	Present Day Value	
				New	Average Depreciated
Cruiser	11	22-40	2.5-3.5	$128,000	$ 64,000
Inboard	3	24-30	2.5	7,000	3,500
Sail	36	14-31	1.5-3.5	32,000	16,000
Auxiliary Sail	2	26-34	3.5-5.0	8,000	4,000
Outboard	12	12-15	1.0	7,000	3,500
TOTAL	64			$182,000	$ 91,000

33. Transient boats of the cruiser and auxiliary-sail types, averaging 270 boats annually, visit the middle harbor for stays averaging 2 days per boat or a total of 540 boat days. In a boating season of 100 days, this is equivalent to the permanent addition of 5 vessels to the home fleet as indicated in the tabulation given below. The valuation assigned to auxiliary-sailing vessels is the average for the class involved, which is higher than the valuation of the auxiliary-sailing craft which belong to the local fleet.

Type of Craft	Number	Length (Feet)	Draft (Feet)	Present Day Value	
				New	Average Depreciated
Cruiser	3	30	3.5	$60,000	$ 30,000
Auxiliary Sail	2	35	5.0	20,000	10,000
TOTAL	5			$80,000	$ 40,000

34. In terms of the possible net returns which could be realized on these vessels if they were operated on a for-hire basis, the total possible benefit that could accrue to the owners is as follows:

Craft	Benefit
Cruiser	$ 8,460
Inboard	350
Sail	1,920
Auxiliary Sail	1,260
Outboard	350
	$12,340

Proponents of the desired improvement claimed that inadequate channel depths in the inner harbor precluded the full realization of these benefits by restricting access to the town wharf except during the high water period.

35. In 1950, field investigation revealed that major changes had taken place in the harbor subsequent to the public hearing in 1945. The recreational fleet of 64 boats is associated with the Kollegewidgwok Yacht Club. This club is located on the middle harbor opposite Peters Point. Wharfage, facilities for fuel and water, and 21 moorings for members are provided by the club. The remaining 43 local boats of the local fleet anchor in the middle harbor as close as possible to the owners' residences. Most of these boats use the club's facilities for the procurement of fuel, water and supplies. Use of the Town wharf after completion of the improvement considered herein would be limited to trips for outfitting or repairs,

plus occasional trips for convenience in landing near the shopping center, fueling, or taking on passengers. The annual benefits from the improvement would not exceed 5 percent of the total possible recreational benefit, or about $500.

36. Transient boats making overnight stops in Blue Hill Harbor anchor in the middle harbor, using the facilities of the yacht club for fuel and water. Supplies are delivered from the Town of Blue Hill to the club and transferred from the club's float to the boats. The improvement of the inner harbor would relieve congestion at the yacht club and provide visiting craft with a choice of wharves. Some use of the Town wharf is assured. The monetary benefits, however, would be small, amounting to not more than 5 percent of the total recreational benefits possible of enjoyment by the visiting craft, or about $100 annually.

37. The town's fishing fleet, consisting of 18 boats, is presently based at South Blue Hill, a section of the town of Blue Hill, where it buys its fuel and supplies. It consists chiefly of lobstermen who fish 10 to 18 miles offshore, dependent on weather conditions. The fleet is based in South Blue Hill because it is 5 miles nearer to the fishing grounds than Blue Hill Harbor. The daily catch of these fishermen is sold directly to buyers who pick it up at the boats' moorings at South Blue Hill. Representatives of the fleet, in 1950, advised that any improvement in the inner harbor at Blue Hill would not affect the fleet, since it would continue to base at South Blue Hill, buy its supplies there and continue the present method of disposing of its catch. They also advised that any new boats added to the fleet would prefer to base at South Blue Hill due to its comparative nearness to the fishing grounds and hence, the improvement of the inner harbor would not result in any increase in the total amount of fish caught. Thus, no benefit is indicated for any increased catch of fish or for any increase in the net value of the fish caught due to the possibility of basing fishing boats in Blue Hill Harbor.

38. At the present time, the only use of the inner harbor made by this fishing fleet consists of docking at the town wharf for short periods of time for minor engine repairs. These repairs are made by the local machine shop which is situated about 500 feet from the wharf, and is fully equipped, including welding equipment, and handles marine supplies and equipment. Major repairs are accomplished by either removing the engine from the boat at the old steamboat wharf in the middle harbor and transporting it to the machine shop, or by transporting a mechanic and his equipment to the boat itself. It was claimed that if the harbor were improved so that boats could remain at the wharf in close proximity to the machine shop at all tidal stages, an average of 2 hours of a mechanic's time per repair job could be saved in making major repairs. On the basis of the 15 major overhauls reported by the local machine shop in 1949, this would amount to a total of 30 hours annually, having a dollar value of about $100. The reduction in cost of repairing fishing boats decreases the net value of the fish catch by an equal amount and is considered to be entirely a general benefit.

39. It is reasonable to assume that the improvement of the inner harbor, together with extension of the Town wharf would make profitable the operation of at least two party boats. These boats would base at the Town wharf, making daily trips, weather permitting, during the summer with fishing or sight-seeing parties. These boats would operate as commercial fishermen for the remainder of the year, basing at South Blue Hill with the fishing fleet. Based on the operation of party boats from similar marine harbors, these craft would average about 40 trips during the summer season. The net return per trip would be about $20 per boat, for a total of $800 per boat per season. The total recreational benefit from operation of two boats would be $1,600 annually.

40. The total primary benefits possible from improvement of the inner harbor are summarized below:

Type	General	Local	Total
Benefits to existing recreational craft	$ 250	$250	$ 500
Benefits to transient recreational craft	50	50	100
Benefits to fishing fleet	100	-	100
Benefits from charter boat operation	800	800	1600
TOTAL ANNUAL BENEFITS	$1200	$1100	$2300

COMPARISON OF BENEFITS AND COSTS

41. The total carrying charges for the improvement would be $8,740 annually. The annual benefits would be $2,300. Comparing the annual benefits with the annual carrying charges results in a benefit-cost ratio of 0.3 to 1.0, indicating that the improvement is not warranted.

PROPOSED LOCAL COOPERATION AND ALLOCATION OF COSTS

42. Improvement for small boat harbors usually provide for local cooperation based on the proportion of local to total benefits. In accordance with determination in Paragraph 40 that the benefits are about equally local and general in nature, the computations of annual costs of the project made in Paragraph 30 are based on an assumed contribution by local interests of a sum representing one-half of the annual cost. This assumed contribution, and the necessity of extension of the Town wharf by local interests, as indicated in Paragraph 26, denote generally the nature of local cooperation that would be required in connection with the proposed project, but in the absence of a favorable benefit-cost ratio, detailed requirements for local cooperation have not been prescribed.

COORDINATION WITH OTHER AGENCIES

43. All Federal, state and local agencies having interests in the development and use of the waterway were notified of the hearing held July 18, 1945 to obtain the views of local interests concerning the im-

provements desired. Subsequent discussions were held with local officials and other local interests concerning the report.

DISCUSSION

44. Blue Hill Harbor, located on the northwesterly end of Blue Hill Bay, northwest of Long and Mt. Desert Islands, is one of Maine's older summer resorts and, as such, is a port of call for recreational craft that annually cruise along the Maine coast. The harbor has a safe entrance and a reasonably well sheltered anchorage but lacks sufficient channel depth in its inner portion to enable boats to reach the Town wharf at any time but the high water period. Local interests, at the time of the hearing, claimed that this deficiency in channel depth restricted full use of the harbor by the resident and transient recreational fleet. They also claimed that this restriction was detrimental to expansion of the local fishing fleet as fishermen were unable to land their catch, procure fuel and supplies, or effect major boat and engine repairs except at high water periods. To rectify adverse conditions, local interests desire a channel 6 feet deep and 100 feet wide with a turning basin of the same depth in the vicinity of the Town Wharf.

45. Recreational boating is centered in the middle harbor. A yacht club, established in 1946, is situated on the north side opposite Peters Point. Moorings for 21 vessels, a wharf with fueling facilities, and other conveniences are provided by the club. Local vessels anchor at the club anchorage or have their own moorings nearby. Prior to the establishment of the yacht club, local boats obtained their fuel and supplies over the Town wharf during high tidal periods, or tied up to the old steamboat wharf and had necessary items delivered from the town. At present, the local fleet is serviced at the yacht club wharf. Outfitting and repairs are obtained elsewhere. Facilities located on the inner harbor suffer loss of business as transit to the Town wharf is feasible only about 50 percent

of the day. The benefit to accrue to the local fleet through access to the Town wharf has been estimated at $500 annually. This small amount results in part from the belief of local interests that no major increase in the local fleet can be expected, and in part from the adequacy of present facilities.

46. Transient recreational craft visiting Blue Hill for overnight stops anchor in the middle harbor, and procure their supplies at the yacht club. Improvement of the inner harbor and extension of the Town wharf would benefit these vessels somewhat by providing access to the shopping center and repair shop. The resultant benefit has been estimated to total about $100.

47. At the public hearing in 1945, local interests stated that the local fishing fleet of 18 boats worked out of Blue Hill Harbor. This is not the case at present. The entire fleet now bases at South Blue Hill. Local fishermen have stated that the change was due because of the nearness of South Blue Hill to the fishing grounds, and its convenience for the fish buyers. It was stated that improvement of the inner harbor would have minor effects on their operations. Benefits of about $100 annually are estimated herein.

48. The major benefit from the improvement would result from the establishment of party or charter boat operation from the Town wharf. There is sufficient business during the summer season for the operation of at least two boats. Recreational benefits therefrom would total about $1600 annually.

49. The total evaluated benefits, amounting to $2300 annually, indicate that there is little need for improvement of the inner harbor, and that present facilities are generally adequate for existing usage. Some inconvenience exists through absence of adequate public wharfage. This deficiency could be remedied through the expenditure of a relatively small

sum renovating the old steamboat wharf at Peters Point. Repair and modernization of this wharf would enable the town to collect some revenue and might stimulate more extensive use of the harbor by transient craft. Repair of the wharf is a matter for the consideration of local interests.

50. There are several boat yards in the immediate area. The boatyard at East Blue Hill and the one at Webber Cove are fully equipped to handle boats up to 75 feet in length. There are several boatbuilding and repair yards within a 20-mile cruising radius of Blue Hill Harbor. Improving the inner harbor to provide access to the machine shop near the Town wharf would not provide major benefits to recreational or fishing boats.

51. As indicated in Paragraph 42, the cost of the improvement is far in excess of any anticipated benefit. In addition, any improvement which might be justified at Blue Hill Harbor would require, under present conditions, a substantial cash contribution from local interests. The president of the local Chamber of Commerce stated that, in his opinion, the town could not be expected to participate in any improvement. It appears reasonable that a small town with a real estate valuation slightly over one million dollars would be unwilling to contribute any large sum for harbor improvements unless substantial local benefits would result therefrom

52. The first cost of the considered improvement is estimated to be $185,000, with annual costs of $8,740. Evaluated benefits are minor, resulting in a benefit-cost ratio of 0.3 to 1.0, which indicates that the improvement is not economically justified.

CONCLUSIONS

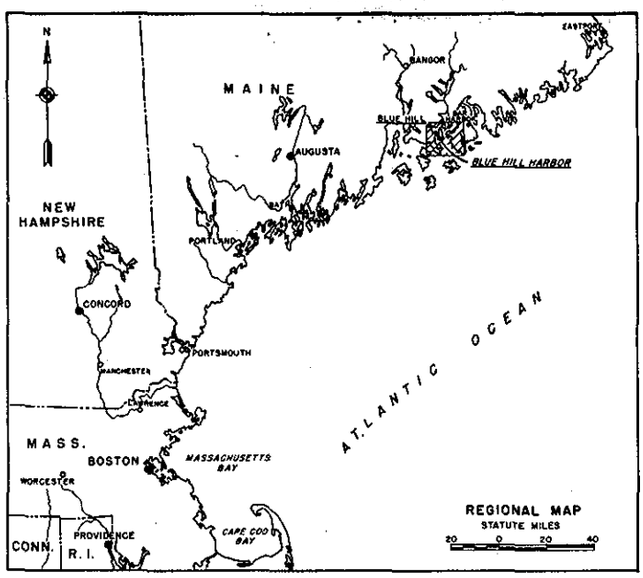
53. Blue Hill Harbor provides adequate navigational facilities for all craft using the harbor. Improvement of the inner harbor by providing a channel to and a turning basin near the Town wharf is not economically

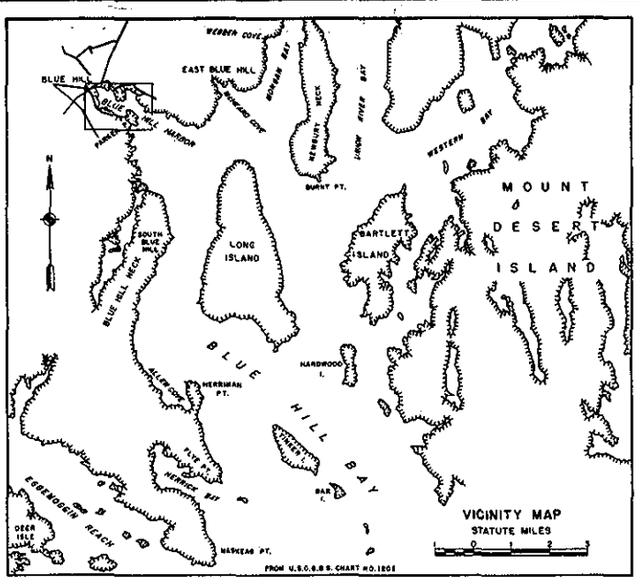
justified at this time.

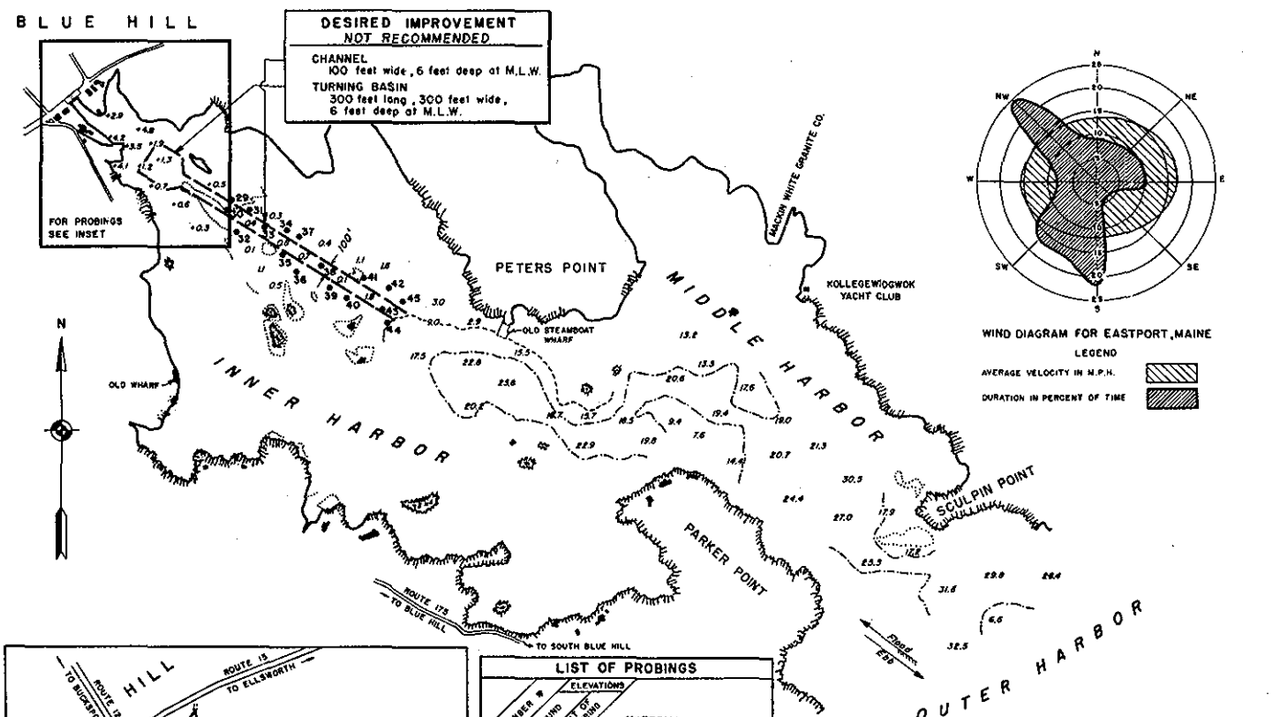
RECOMMENDATIONS

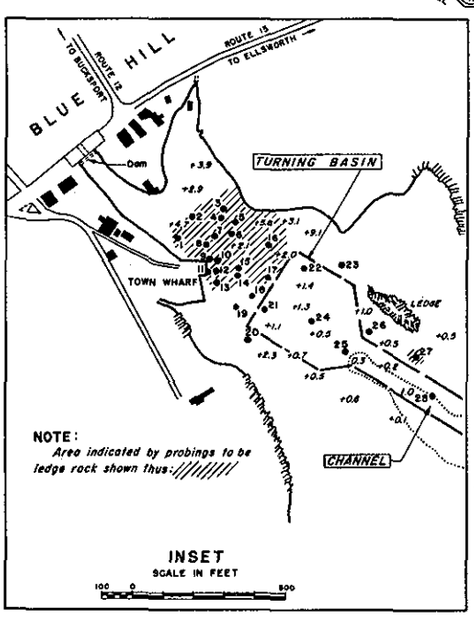
54. The Division Engineer recommends that no project for the improvement of Blue Hill Harbor be adopted at this time.

H. J. WOODBURY
Colonel, Corps of Engineers
Division Engineer









LIST OF PROBINGS

NUMBER *	ELEVATIONS GROUND	ELEVATIONS LIMIT OF PROBING	MATERIAL
1	+2.6	+1.9	Sand, Gravel, Loose Rocks, Rock
2	+2.7	-0.4	" " " " "
3	+2.6	+0.3	" " " " "
4	+2.5	+0.2	" " " " "
5	+2.9	+1.4	" " " " "
6	+2.0	-2.5	" " " " "
7	+2.3	-0.7	" " " " "
8	+2.4	-0.1	" " " " "
9	+2.3	+0.7	" " " " "
10	+2.1	+0.6	" " " " "
11	+2.9	-2.6	" " " " "
12	+2.2	-0.3	" " " " "
13	+1.8	-4.8	" " " " "
14	+1.6	-4.3	" " " " "
15	+1.6	-4.1	" " " " "
16	+3.0	-3.1	Gravel, Stones, Rock
17	+1.2	-0.9	" " " "
18	+1.5	-6.1	Sand, Gravel, Stones
19	+0.6	-6.8	Gravel, Stones, Rock
20	+1.3	-7.8	Medium Packed Sand, Clay, Gravel
21	+1.4	-5.4	" " " "
22	+1.2	-8.1	Hard " " "
23	+1.8	-7.8	Hard Packed Sand And Clay
24	+1.4	-8.0	Medium Packed Sandy Clay
25	+0.7	-9.5	Sand, Clay, Mud
26	+0.8	-8.1	Sand, Clay, Light Gravel, Hard Packed
27	+0.4	-4.1	Sand, Clay, Gravel, Rock
28	-0.0	-8.0	Sand, Clay, Mud
29	-0.2	-8.5	" " "
30	-0.1	-9.1	" " "
31	-0.0	-9.8	Mud
32	-0.2	-9.5	"
33	-0.2	-9.2	"
34	-0.6	-9.4	"
35	-0.6	-9.2	"
36	-1.0	-9.3	"
37	-0.5	-9.2	"
38	-0.4	-8.6	"
39	-1.4	-8.7	"
40	-0.3	-8.5	"
41	-0.1	-8.6	"
42	-2.0	-8.2	"
43	-2.6	-8.5	"
44	-3.4	-8.5	"
45	-1.9	-8.6	"

* Probings are as shown on Map File No. 1045 D-6-2, but are given new key numbers. Map not published.

LEGEND
MEAN HIGH WATER 10.3 FT.
MEAN LOW WATER
6-FT. CURVE OF DEPTH
18-FT. CURVE OF DEPTH
PROBING LOCATIONS
LEDGE ABOVE M.H.W.

NOTES:
Soundings and probings are in feet and tenths and are referred to the plane of Mean Low Water.
Hydrography and topography from survey of Aug. 30 to Sept. 14, 1948.

BLUE HILL HARBOR, MAINE

IN 1 SHEET SCALE IN FEET
500 0 500 1000 1500

NEW ENGLAND DIVISION, BOSTON, MASS. MAR. 6, 1951

APPROVED: John J. Allen, CHIEF, ENGINEERING DIVISION
APPROVED: [signature], COL., C.E., DIVISION ENGINEER
SUBMITTED: [signature], CHIEF, PLANNING AND REPORTS BRANCH
DRAWN BY A.E.R. TR. BY A.L.C. CK. BY W.D.J.
[signature], CHIEF, RIVER & HARBOR SECT.
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PLATE I